

*Produced By:*

**Commodore International Spare Parts GmbH  
Braunschweig, West Germany**

***SERVICE MANUAL***

**CDTV**

**MAY, 1991**

**PN-400403-01**

***INTERNATIONAL EDITION***

SERVICE POLICY AND PART NUMBER INFORMATION MAY VARY ACCORDING TO COUNTRY. SOME PARTS MAY NOT BE AVAILABLE IN ALL COUNTRIES.

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**1.1 SPECIFICATIONS (Continued)****REAR PORTS**

Centronics parallel interface; RS-232 serial interface; External floppy disk drive interface (Amiga floppy disk drive compatible); Hardwired alternative to IR for keyboard, mouse, joystick; 2 audio output ports (RCA type plug) (requires external audio amplifier); Midi in and out

**FRONT PORT**

Stereo headphone jack; Port for optional personal RAM/ROM card (256K)

**POWER CONSUMPTION**

50W (average AC100-240V, 50/60Hz)

**ENVIRONMENTAL CONDITIONS**

Operating temperature 5C to 40C (non-condensing); 41F to 104F

Operating humidity 25% to 80% (non-condensing)

**FRONT PANEL DISPLAY**

Fluorescent (white characters on black); Time, track and volume level; Clock remains lit when unit is turned off; Display controllable by application

**FRONT PANEL CONTROLS**

Power On/Off; Headphone volume Up/Down; Play/Pause; Stop; Forward/Reverse — Scan/Skip; CD/TV; Reset

**TEXT MODES**

80 characters/25 lines; 60 characters/25 lines; Various font sizes and types selectable; Screen colors user definable

**GRAPHICS MODES****(NTSC)**

320 X 200 non-interlaced  
640 X 200 non-interlaced  
320 X 400 interlaced  
640 X 400 interlaced  
plus overscan and HAM modes

**(PAL)**

320 X 256 non-interlaced  
640 X 256 non-interlaced  
320 X 512 interlaced  
640 X 512 interlaced  
plus overscan, HAM, etc.

**CD-ROM DRIVE SPECS**

Sony/Philips type CD-ROM standard Mode 1, Mode 2

Data readout from disk	153 Kbytes/sec (Mode 1); 171 Kbytes/sec (Mode 2); 2 Megabytes/sec (burst)
Average access time	0.5 sec
Maximum access time	0.8 sec
Soft read error	Less than 10e-9
Hard read error	Less than 10e-12
Seek error	Less than 10e-6
Commands	CD-ROM, CD-Audio, CD+G
MTBF	10,000 P.O.H.
Standard supported	ISO-9660
Data Capacity	540 MegaBytes (approx.) (about 700 Amiga floppy disks)

**CD AUDIO SPECS**

8X oversampling	
Audio output	External 1.4VRMS, 10K OHM
Frequency response	4-20KHz
Signal/Noise	- 92DB
Channel Separation	- 85DB
Harmonic Distortion	0.02% at 1 KHz
Maximum audio capacity	about 28 hours - AM quality
Sample Rates	variable from CD Audio rate (44KHz) to 6KHz
Dual 16 bit D/A converter plus	64 levels of attenuation

## 1.1 SPECIFICATIONS

### **CENTRAL PROCESSING UNIT**

MC68000 (Motorola) 16/32 bit main CPU

### **CPU SPEED**

7.15909 MHz (NTSC); 7.09379 MHz (PAL)

**NOTE:** CPU speeds can vary when using an external system clock such as with genlocking units.

### **CUSTOM CHIPS**

3 Amiga-specific custom chips (Agnus, Paula and Denise) which enhance system performance by taking over tasks such as handling video, sound, direct memory access (DMA) and/or graphics.

### **OTHER CUSTOM CHIPS**

CDTV will also have other custom chips for handling the CD-ROM interface and IR control.

### **MEMORY**

1 MB (Megabyte) chip RAM; 2K non-volatile RAM reserved for system (clock, prefs, etc.); 512K ROM

### **INTERNAL SLOTS**

Intelligent video slot (for optional genlock, RF board, etc.) 15 pin edge connector; DMA slot — for SCSI, LAN, etc.

### **VIDEO OUTPUTS**

Analog RGB, Digital RGB (DB-23 connector); Composite video NTSC or PAL (RCA connector); Component video Y-C (S connector type for S-VHS and Hi8); RF Modulated (F connector); Optional genlock capabilities via plug-in module. Three-mode (CDTV, video source or mixed) under software control.

### **VIDEO DISPLAY (GENERAL)**

400 lines/vertical frequency 60Hz (NTSC); 512 lines/vertical frequency 50Hz (PAL); Graphic co-processor with beam synced draw, fill and move modes (blitter); Maximum 1Mb video memory (chip memory); Palette of 4096 colors; Maximum 6 bitplanes; 8 sprites per scanline

### **OPERATING SYSTEM**

Amiga kickstart 1.3 in ROM; ISO 9660 file system handler; High-speed decompression for graphics, audio and other data; CD + G, CD + midi, CDDA support

### **IR (INFRARED) REMOTE UNIT SPECS**

#### *Landscape format*

Proprietary high-speed IR signal; Power supplied by 2 AA batteries; 10 numeric keys plus Escape and Enter; Joy/Mouse, CD/TV and Genlock keys; Button for Up, Down, Left, Right and diagonal movement; Two Select (or Fire) keys : A and B; CD audio — Reverse, Forward, Play/Pause, Headphone Volume Up-Down and Stop keys

### **OPTIONAL ACCESSORIES**

External floppy disk drive; Trackball; Personal RAM or ROM card; Genlock; Keyboard; Modem

### **ADDED RAW KEYBOARD CODES**

6C Play/Pause; 6D Stop; 6E Fast Forward; 6F Fast Reverse

### **MEMORY MAP (IN ADDITION TO IM CHIP A500)**

Memory Card \$E00000-\$E000FF

Non-volatile Memory \$DC8000

DMAC Auto config., typically \$E90000

Tri-port Mapped to DMAC, \$B0

### **COMPUTER GENERATED AUDIO SPECS**

4 independent sound channels (right and left); Complex waveforms; Sound buffer up to 128K, unlimited seamless sound; 8-bit D/A converter plus 6-bit volume control

### **AUDIO EXTRAS**

Capable of sound mapping Amiga over CD-DA sound.

## **Commodore International Spare Parts List**

### **SHIPPING ASSEMBLIES**

Commodore part numbers are provided for reference only and do not indicate the availability of spare parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally. Part number information may vary according to country, some parts may not be available in all countries. Part Numbers are subject to change, see Parts (Section 2) of current Techtopics for current numbers.

CDTV SHIPPING ASSY	CDTV SHIPPING ASSY <i>(Continued)</i>
513402-01 US	363713-02 MODULATOR, CDTV PAL
513402-02 CN	363713-01 MODULATOR, CDTV NTSC
513402-03 U.K.	903508-07 CORD, POWER BSI BLACK
513402-04 GR	903508-18 CORD, POWER UL/CSA BLACK
513402-05 NOT USED, USE -04	903508-01 CORD, POWER VDE BLACK
513402-06 IT	903508-02 CORD, POWER SEV BLACK
513402-07 NOT USED, USE -06	903508-03 CORD, POWER SAA BLACK
513402-08 SG	903508-10 CORD, POWER JP BLACK
513402-09 NOT USED, USE -06	390875-01 AUTO RF SWITCH BOX NTSC
513402-10 NOT USED, USE -06	251846-01 CABLE, RF PAL
513402-11 NOT USED, USE -06	325228-01 RF SWITCH SD
513402-12 SD	252590-01 CD CADDY
513402-13 NOT USED, USE -08	252594-01 REMOTE CONTROLLER CDTV
513402-14 NOT USED, USE -06	252592-01 BOX, INDIVIDUAL CDTV
513402-15 NOT USED, USE -06	252593-01 CARTON, OUTER CDTV
513402-16 NOT USED, USE -06	252649-01 BOX, ACCESSORY
513402-17 NOT USED, USE -06	252595-01 FOAM, PACKING - FRONT
513402-18 AL	252596-01 FOAM, PACKING - REAR
513402-19 NOT USED, USE -06	311945-01 CABLE AUDIO
513402-20 NOT USED, USE -06	400807-01 SVC SUB ASSY
513402-21 JP	318882-01 CARD, WARRANTY, CN
368082-02 GUIDE, QUICK CONNECT	368014-01 CARD, WARRANTY, AL
250802-01 MAIN ASSY CDA-1, NTSC	320408-04 BAG, FLAT 650MM X 650MM FOR CDTV
250802-02 MAIN ASSY CDA-1, PAL-I	324257-01 BAG, DRYING AGENT
250802-04 MAIN ASSY CDA-1, PAL-G	367669-01 DISK ASSY -- CD WELCOME DISK

## Commodore International Spare Parts List

### MAJOR ASSEMBLIES

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<b>250802</b>	<b>MAIN ASSY CDTV</b>	<b>250805-01</b>	<b>REAR PANEL ASSY CDTV</b>
250802-01	NTSC	252549-01	PANEL REAR CDTV
250802-02	PAL-I	325552-06	CONN POWER FILTER
250802-03	SECAM	252551-01	FAN
250802-04	PAL-G	252631-01	GASKET FAN
250802-05	BLANK CARD	252552-01	METAL COVER SCSI SLOT W/O CARD
250802-06	SCART	252640-01	HARNESS ASSY FAN
250803-01	BOTTOM CHASSIS ASSY CDTV NTSC	252553-01	HARNESS ASSY AC INPUT
250803-02	BOTTOM CHASSIS ASSY CDTV PAL	905476-04	TUBING HEAT SHRINKABLE 4 DIA X 40 L
255077-01	LABEL, RATING CDTV	1540010-04	GROUND CABLE ASSY GREEN/YELLOW
366567-01	LABEL, SERIAL#	906800-11	SCREW PH M3 X 35 BLACK
366565-01	LABEL, LASER CAUTION	906800-05	SCREW PH M3 X 6 BLACK
325090-02	SEAL, WARRANTY	905960-03	NUT HEXAGON M3
366566-01	LABEL, DISK CAUTION	906805-01	SCREW STP FLAT HEAD M3 X 6 BLACK
252665-01	INSULATION SHEET, FLASH MEMORY	907272-01	FLAT WASHER M3
252587-01	COVER, TOP CDTV		
252651-01	VIDEO CARD, NTSC		
390891-01	VIDEO CARD, PAL FOR 250802-02 SET SW TO PAL-I	<b>250807-01</b>	<b>FRONT BEZEL ASSY CDTV</b>
390932-01	VIDEO CARD, SECAM FOR 250802-04 SET SW TO PAL-G ON VIDEO CARD 390891-01	252566-01	FRONT BEZEL CDTV
363714-01	VIDEO SCART CARD	252567-01	DOOR CADDY CDROM DRIVE
906883-03	SCREW, SELF TAPPING PAN HEAD M3 X 6 (QTY = 2)	252568-01	SPRING DOOR CADDY
252466-02	SCREW, SELF TAPPING BIND HEAD M4 X 6 (QTY = 4)	252569-01	PLASTIC FILTER FL DISPLAY
906800-05	SCREW, PAN HEAD M3 X 6 (QTY = 2)	250481-01	PCB ASSY POWER SW & PHONE JACK
<b>250803</b>	<b>BOTTOM CHASSIS ASSY CDTV (-01 — NTSC; -02 — PAL)</b>	252571-01	DOOR MEMORY CARD
250804-01	CDROM MECHANISM ASSY CDTV	252572-01	LENS PLASTIC LED
250482-01	PCB ASSY MEMORY CARD	252573-01	BUTTON POWER SWITCH
252583-01	BOTTOM CHASSIS CDTV	252574-01	PLASTIC SWITCH UNIT
250806-01	POWER SUPPLY ASSY CDTV	250483-01	PCB ASSY LED INDICATOR GREEN
252564-01	BRACKET METAL REG MKE TOP	250669-01	FLEXIBLE BUSHING
252584-01	FOOT CDTV W/ HOT STAMP	252666-01	HOLDER FRONT BEZEL
252585-01	FOOT RUBBER CDTV	252668-01	NYLON WASHER
252635-01	RUBBER BUSHING	906115-01	TOROID
252641-01	CABLE TIE	252570-01	PLATE LOGO COMMODORE
250484-01	PCB ASSY MAIN LOGIC CDTV NTSC	250479-01	PCB ASSY DISPLAY CDTV
250484-02	PCB ASSY MAIN LOGIC CDTV PAL	252630-01	PLASTIC PCB HOLDER SW AND PHONE JACK
250485-01	PCB ASSY MIDI INTERFACE	906885-01	SCREW STP PH M2.6 X 8
250805-01	REAR PANEL ASSY CDTV	906883-01	SCREW STP PH M3 X 8
250807-01	FRONT BEZEL ASSY CDTV	906883-04	SCREW STP PH M3 X 10
390918-01	HOLDER BOTTOM CHASSIS	<b>250485-01</b>	<b>PCB ASSY MIDI INTERFACE</b>
906883-03	SCREW PAN HEAD M3 X 6	252625-01	SCHEMATIC MIDI INTERFACE
906883-04	SCREW PAN HEAD M3 X 10	252626-01	PCB MIDI INTERFACE
390903-01	SCREW ST PH M3 X 6 BLACK	252166-03	CONN 5 PIN DIN
251449-02	SCREW ST PH M4 X 8	252664-01	PCB HOLDER PLASTIC
251541-04	SPRING WASHER M4	252628-01	HARNESS ASSY MIDI INTERFACE
905665-04	LOCK WASHER EXT TOOTH M4		
906883-01	SCREW ST PH M3 X 8	<b>250483</b>	<b>PCB ASSY LED INDICATOR (-01 — GREEN; -02 — AMBER)</b>
906885-02	SCREW ST M2.2 X 6	252598-01	PCB LED INDICATOR
906670-03	SCREW M2.2 X 6	325521-07	LED GREEN 5 DIA ROHM
		325521-04	LED GREEN 5 DIA SHARP
		252621-02	LED AMBER 5 DIA ROHM SLH 56YC
		252621-01	LED AMBER 5 DIA SHARP
		252582-02	HARNESS ASSY 2 CONDUCTOR
		<b>250481-01</b>	<b>PCB ASSY POWER SWITCH AND PHONE JACK</b>
		252578-01	PCB POWER SW AND PHONE JACK
		252579-01	HEADPHONE JACK 6.43 DIA PC MOUNT TANAKA ELEC
		252580-01	SWITCH POWER PC MOUNT EXCELL ELEC
		252581-01	HARNESS ASSY SHIELDED 2 CONDUCTORS
		252582-01	HARNESS ASSY 2 CONDUCTORS
		252629-01	PLATE GROUND SW AND PHONE JACK
		<b>250482-01</b>	<b>PCB ASSY MEMORY CARD</b>
		252575-01	PCB MEMORY CARD
		252576-01	HARNESS ASSY FLAT CABLE 40 PIN
		252577-01	CONN MEMORY CARD ITT CANNON
		252645-01	COPPER TAPE 15MM WIDTH
		<b>250479-01</b>	<b>PCB ASSY DISPLAY CDTV</b>
		252537-01	SCHEMATIC DISPLAY CDTV
		252642-01	PCB DISPLAY CDTV
		252538-01	PCB DISPLAY CDTV
		252539-01	IR RECEIVER MODULE SHARP
		252546-01	RUBBER DISPLAY T=5
		252540-01	FL DISPLAY CPF2423A NORITAKE
		<b>250484</b>	<b>PCB ASSY MAIN LOGIC CDTV (-01 — NTSC; -02 — PAL)</b>
		252604-01	PCB FAB MAIN LOGIC CDTV

## Commodore International Spare Parts List

### PCB Components

### PCB Assembly CDTV

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IC COMPONENTS			CONNECTORS (Continued)		
390084-03	68000 CPU 8MHZ	U51	390851-02	DIN MINI 4 PIN	CN8
318072-01	GARY 5917	U12	903345-20	HEADER ASSY 40 PIN 2.54 PITCH	CN9,13
252126-02	DENISE 8362R8	U8	252616-03	HEADER ASSY 3 PIN 2 PITCH	CN17,18,26
252127-02	PAULA 8364R7	U4	252616-02	HEADER ASSY 2 PIN 2 PITCH	CN19,23,24
315093-02	ROM KICKSTART V1.3	U13	250669-04	HEADER ASSY 4 PIN 2.5 PITCH	CN21,22
318029-03	CIA 8520 A-1 2 MHZ	U9,10	250669-02	HEADER ASSY 2 PIN 2.5 PITCH	CN20
390229-01	VIDEO HYBRID	HY1	252616-04	HEADER ASSY 4 PIN 2 PITCH	CN27
318099-01	DRAM 256K X 4 100NS ZIP	U65-72	903332-02	HEADER ASSY 2 PIN 2.54 PITCH	JP15
318099-05	DRAM 256K X 4 80NS ZIP	SUB FOR 318099-01	380333-01	JUMPER	
318069-02	F. AGNUS 8372	U44			
390563-02	DMAC 4701	U36			
252606-01	ROM CDROM DRIVER, ODD	U35			
252607-01	ROM CDROM DRIVER, EVEN	U34			
252608-01	CPU LC6554H	U62			
252609-02	CPU 6500/1	U75			
318073-01	RTC MSM6242B	U61			
252611-01	AMP M51568FP	U16			
252612-01	ATT TC9154AP	U19			
901523-01	TIMER NE555	U76			
390086-01	AMP TL084/LF347	U5,6			
901523-10	AMP TL082/LF353N	U18			
901879-03	TRI-PORT 6525B	U32			
252614-01	DAC LC7883M	U17			
328156-02	RESET PST518B	U56,82			
252620-01	SRAM 16K SK DIP 100NS	U78,79			
252620-02	SRAM 16K SK DIP 120NS	SUB FOR -01			
252620-03	SRAM 16K SK SIP 150NS	SUB FOR -01			
901521-29	74LS373	U46,48			
901521-16	74LS138	U49,50			
318050-01	74F244	U54,55			
901521-11	74LS157	U7			
310003-01	74HC245	U1,2			
901882-01	1488	U3			
901883-01	1489	U11			
901521-28	74LS164	U31			
901521-52	74LS293	U42			
901521-06	74LS74	U24,28			
390110-01	74F04	U14			
901521-46	74LS245	U52,53			
901521-38	74LS38	U15			
901521-31	74LS32	U22,25,39,73			
901521-03	74LS08	U21,80			
901522-30	7407	U27,37			
901521-22	74LS27	U41,43,64			
901521-02	74LS04	U26,40,63,58			
901521-21	74LS02	U23,30,74			
901521-01	74LS00	U29,81			
901521-13	74LS244	U45,47,57,59,60,77			
318066-01	74F00	U38			
IC SOCKETS			RESISTOR PACKS		
390185-01	84 PIN PLCC	XU36,44	252657-01	S COM 82K 9 ELEMENT	RP23,24
390141-01	64 PIN SDIP	XU62	902441-17	S COM 470 OHM 5 ELEMENT	RP13
904150-10	64 PIN DIP	XU51	902410-08	S COM 4.7K 9 ELEMENT	RP3,9,10,26
251313-02	48 PIN DIP	XU4,8,12	902441-10	S COM 120 OHM 5 ELEMENT	RP5
904150-06	40 PIN DIP	XU9,10,13,32,75	902410-13	S COM 10K 9 ELEMENT	RP6
390768-02	32 PIN DIP MCH TOOL	XU34,35	902440-09	S COM 3.3K 9ELEMENT	RP11,25
252600-01	HOLDER CONN CARTRIDGE	T1	252647-02	S COM 47K 3 ELEMENT	RP8
200966-02	TRANSFORMER DC-DC CONV		902442-55	S COM 4.7K 7 ELEMENT	RP12,14,21
CONNECTORS			902441-31	S COM 4.7K 5 ELEMENT	RP19,20,22,27,28
390851-03	DIN MINI 5PIN	CN7	902422-04	INDIVIDUAL 22 OHM 4 ELEMENT	RP7
390242-03	D SUB 23 PIN MALE	CN4	902422-06	INDIVIDUAL 68 OHM 4 ELEMENT	RP4
390241-03	D SUB 23 PIN FEMALE	CN1	902422-05	INDIVIDUAL 47 OHM 4 ELEMENT	RP1,2
390242-05	D SUB 25 PIN MALE	CN2	390227-05	INDIVIDUAL 68 OHM 5 ELEMENT	RP15-17,29,30
390241-05	D SUB 25 PIN FEMALE	CN3	252648-01	INDIVIDUAL 68 OHM 3 ELEMENT	RP31
252602-01	CARD EDGE 30 PIN 2.54 PITCH	CN10,11	902422-09	INDIVIDUAL 1K 4 ELEMENT	RP33
252617-11	KEL 8811 SERIES 170L	CN12	252648-02	INDIVIDUAL 1K 3 ELEMENT	RP32
252603-10	HOUSING MOLEX 52007	CN14,15,16			
252122-02	RCA JACK RED	CN6			
252122-01	RCA JACK WHITE	CN5			
RESISTORS — 1/4W ± 5% UNLESS OTHERWISE SPECIFIED			390904-25	1M	RP96,115
			390904-24	470K	R22,25
			390904-23	100K	R51,67,68
			390904-22	47K	R92
			390904-20	15K	R53,60,20,30
			390904-19	12K	R52,54,59,61,18,28
			390904-18	10K	R4,5,12,14,16,17,23,26,
			390904-17	4.7K	27,64,89,90,135,136,143, R1,39,41,45,55-57,62, 63,77,84,86,117-119, 123,125,126,134,140
			390904-16	3.3K	R19,29,79,105,106
			390904-14	1.5K	R66,100
			390904-13	1K	R7-9,48,76,84,95,97, 128-133,137
			390904-12	750 OHM	R15,24
			390904-05	33 OHM	R88
			390904-10	120 OHM	R46
			390904-07	56 OHM	R78
			390904-09	100 OHM	R50,65
			390904-06	47 OHM	R36,37,98
			390904-04	27 OHM	R43,44
			390904-15	2.7K	R13
			390904-03	22 OHM	R47

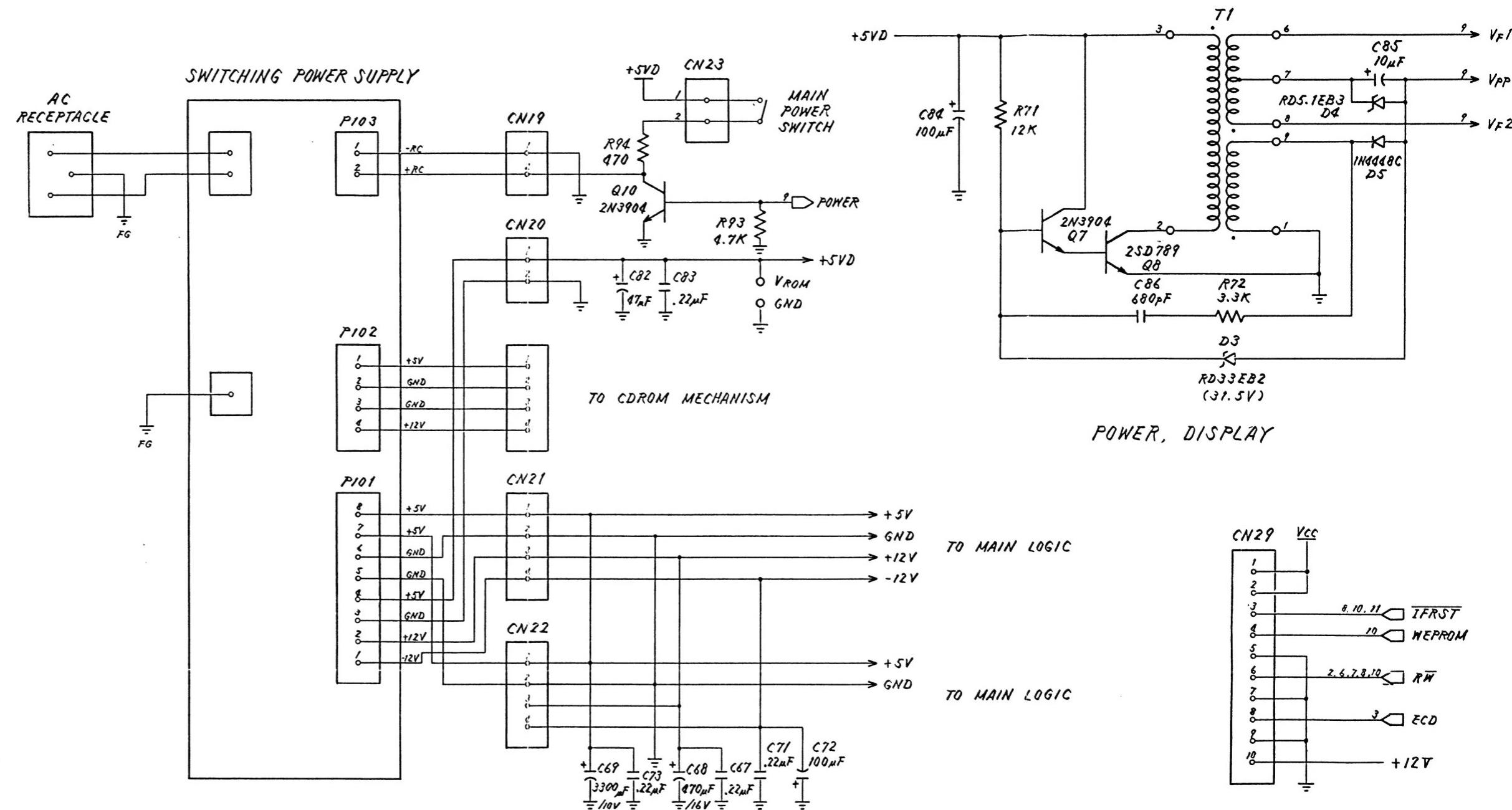
**Commodore International Spare Parts List**  
**PCB Components (Continued)**  
**PCB Assembly CDTV**

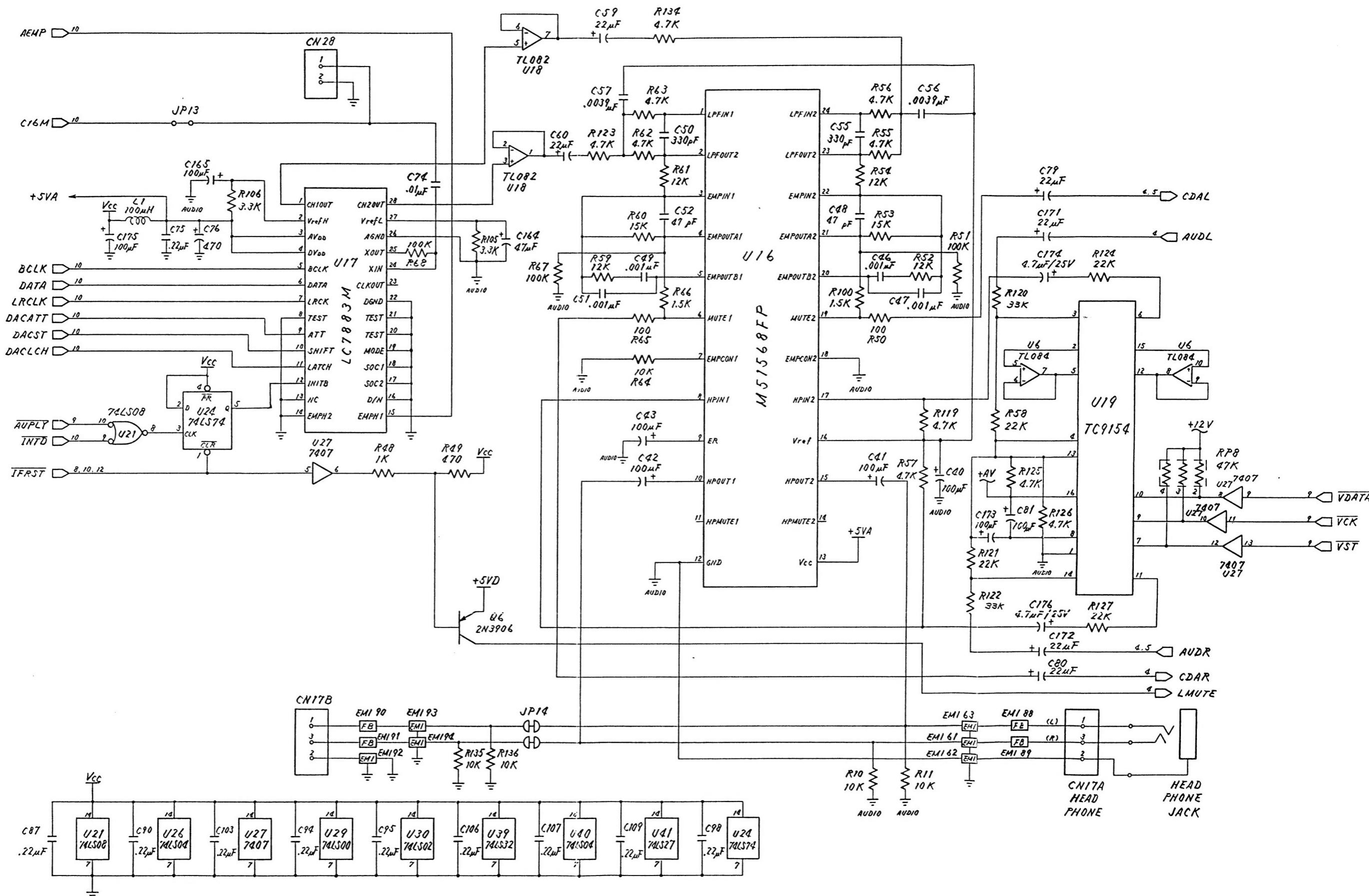
RESISTORS (Continued)			CAPACITORS (Continued)		
390904-02	10 OHM	R69,70	900463-28	MLC AXIAL .01UF	C15,74,154
390904-01	4.7 OHM	R2	900019-07	MLC AXIAL .047UF	C7,16,31-34,63
390904-11	470 OHM	R40,42,49,83,111,112	900463-26	MLC AXIAL 6800PF	C10,19
390904-21	22K	R58,121,124,127	900463-23	MLC AXIAL 3900PF	C9,18,56,57
901600-15	47 OHM, 1/2W ± 5%	R3,101,102	900463-37	MLC AXIAL .1UF	C65,91,124,134,150,161,179
901600-52	33 OHM, 1/2W ± 5%	R114	900010-42	CER DISCS 22PF	C135
901550-07	100K	R82	900010-64	CER DISCS 33PF	C131,132
901550-07	12K	R71	900010-35	CER DISCS 10PF	C126,128
901550-20	10K	R85,103,104	900010-23	CER DISCS 680PF	C86
901550-19	4.7K	R73-75,91,93,99,107,108,116,141	900100-33	ELECT 47UF 16V	C1,2
901550-02	3.3K	R72	900010-61	CER RAD 0.1UF 25V	C3
901550-01	1K	R138,142	900463-10	MLC AXIAL 330 PF	C50,55
901550-94	68 OHM	R80	900463-12	MLC AXIAL 470PF	C169,170
901550-56	47 OHM	R38,109	900463-16	MLC AXIAL .001UF	C46,47,49,51
901550-63	22 OHM	R81,87	900019-17	MLC RAD 47PF 50V	C48,52
901550-133	4.7 OHM	R6	900022-05	MLC RAD .33UF 50V	C92
901550-58	470 OHM	R94	900100-58	ELECT RAD 470UF 10V	C76
901550-52	220 OHM	R21,31	900100-59	ELECT RAD 4.7UF 25V	C174
901550-06	33K	R120,122	251029-06	TRIMMER 6.8 - 45PF	C136
RESISTORS — 1/4W 5%, CARBON			MISCELLANEOUS		
901550-02	3.3K	R1	312754-02	INSULATION TAPE	
901550-89	150 OHM	R2	905476-05	TUBING SHRINKABLE 3 X 20L	
901550-105	33 OHM	R3	251584-15	WRAPPING WIRE AWG 28 L=20MM	
901550-58	470 OHM	R4	251842-02	EMI FILTER 100PF	EMI9-53,55-60,64,70,75-80,83-87,92-95,100
901550-56	47 OHM	R6	390297-02	EMI FILTER 100PF W/FERRITE	EMI1-8,71,72,81,82
901550-52	220 OHM	R1,2,3	903025-01	FERRITE BEAD	EMI65,66,69,74,90,91
901550-76	270 OHM	R4	903025-01	FERRITE BEAD	FB1,2,3
CAPACITORS			251842-02	EMI FILTER 100PF	EMI1,2,3,4
390101-04	ELECT RAD 22UF 35V	C11,20,29,59,60,79,80,177,178	252627-01	PHOTOCOUPLER PC900V	PC1
900100-34	ELECT RAD 10UF 50V	C14,85,155,162,163	252541-01	TACT SWITCH (USE W/252642-01) HOSHIDEN	
900100-57	ELECT RAD 3300UF 10V	C2,61,69	252644-01	TACT SWITCH (USE W/252538-01) ALPS	
900100-33	ELECT RAD 47UF 16V	C82,23,164	252547-01	LED AMBER 1 X 5 SHARP	
390101-02	ELECT RAD 100UF 16V	C6,40-43,72,81,84,125,165,173,175	252621-02	LED AMBER 5 DIA ROHM	
900100-48	ELECT RAD 47UF 50V	C152	252621-01	LED AMBER 5 DIA SHARP	
390101-03	ELECT RAD 470UF 16V	C54,68,77	252548-01	HOLDER LED (USE W/252547-01)	
900100-11	ELECT RAD 4.7UF 25V	C171,172,176	252542-01	WIRE FLAT JUMPER 2 MM PITCH 10 CONDUCTS L=100	
900022-01	MLC RAD .22UF 50V	C3,4,8,12,13,17,21,22,58,71,73,75,78,119,140-147,184,5	252542-02	WIRE FLAT JUMPER 2 MM PITCH 10 CONDUCTS L=100	SUB FOR ABOVE
900022-03	MLC RAD .1UF 50V	C157,153	251188-03	COIL INDUCTOR 100UH	L1
900463-04	MLC AXIAL 100PF	C1,36,37,38,118	252599-01	SHIELD PLATE LOGIC PBC	
390082-05	MLC AXIAL .22UF	C5,24-28,30,35,39,64,66,67,70,83,87,90,93-117,120-123,127,129,130,133,137-139,148,149,156,158,159,167,180-183	390879-01	INSULATION SHEET LOGIC PCB	
			906883-01	STAND OFF M2.5 X 0.45 X 13 (SUB USE W/250486-01)	
			906883-07	SCREW SELF TAPPING PAN HEAD M3 X 8 (QTY 4)	
			318277-17	SCREW SELF TAPPING PAN HEAD M3 X 16 (QTY 4)	
				POLYFOAM BLOCK	

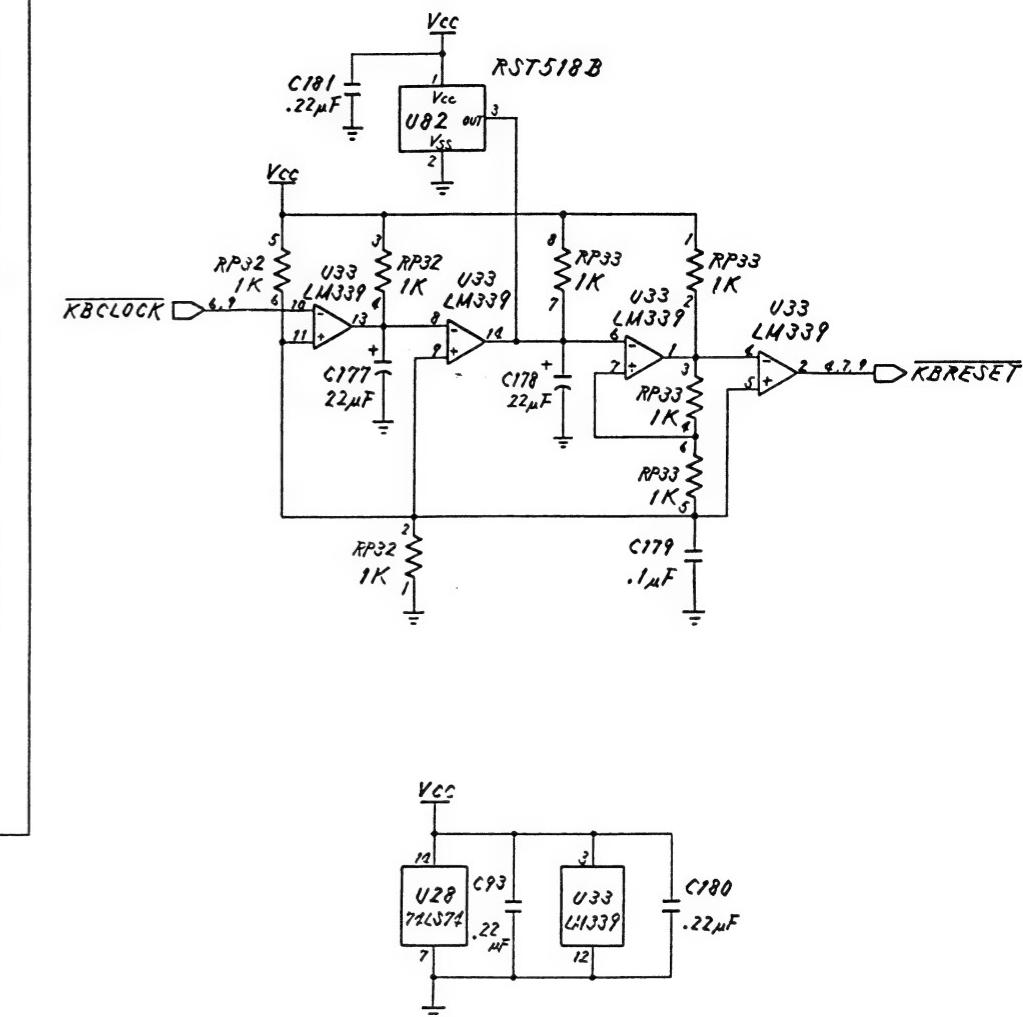
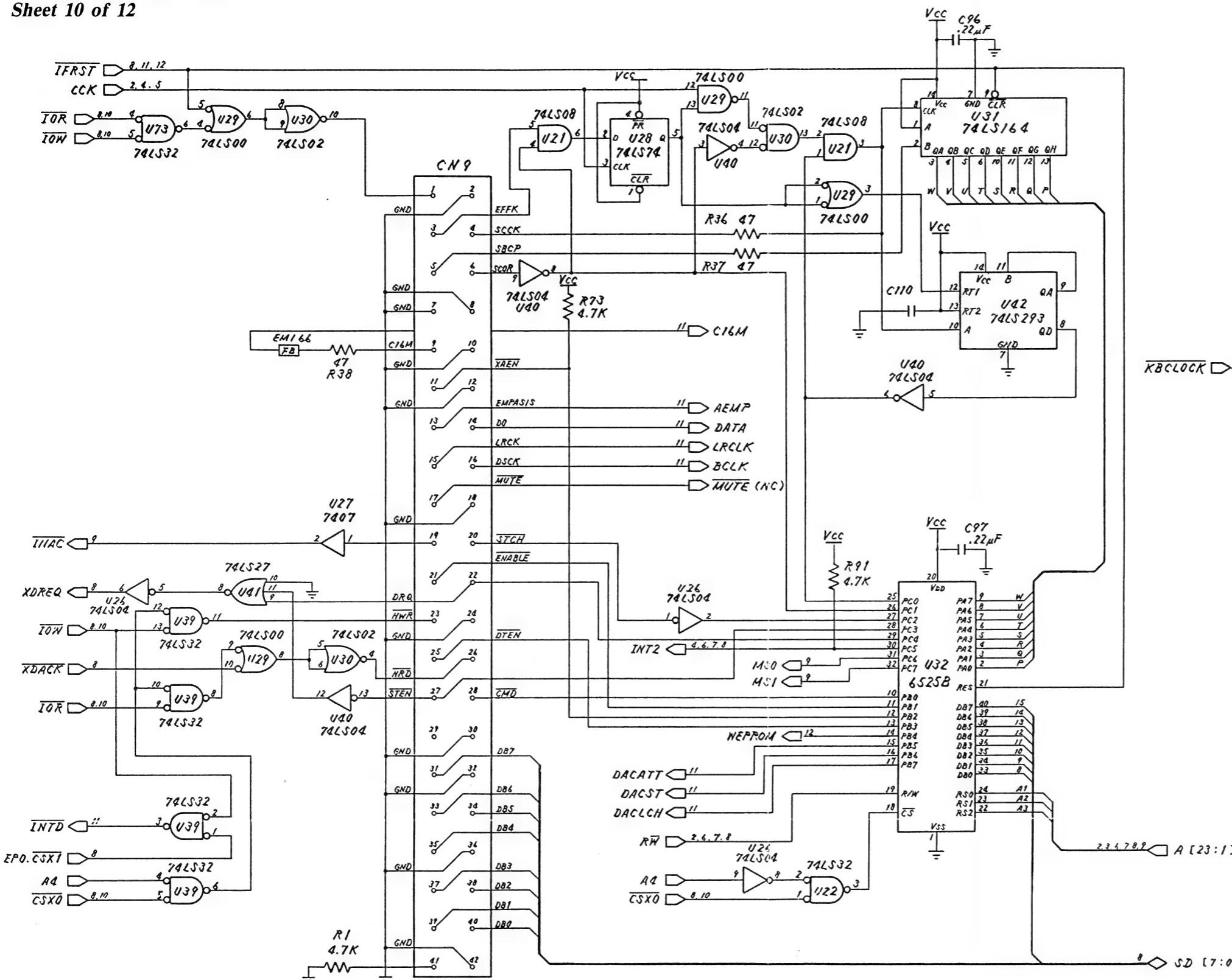
SIGNAL	DESCRIPTION
28MHZ	28.63636 MHz (NTSC) / 28.37516 MHz (PAL) Master Clock
7MHz	7 MHz Processor Clock
A[23:1]	Processor Address (68000)
ACK	Data Acknowledge (Parallel)
AS	Address Strobe (68000)
AUDIN	Audio Input (RS232 jack)
AUDOUT	Audio Output (RS232 jack)
BEER	Bus Error (68000)
BG	Bus Grant (68000)
BGACK	Bus Grant Acknowledge (68000)
BLISS	Blitter Slowdown (chips)
BLIT	Chip Memory Access (chips)
BR	Bus Request (68000)
BUSY	Device Busy (parallel)
CASL/CASU	CAS lower/upper byte (DRAM)
CCK	Color Clock aka C1 (chips)
CCKQ	Color Clock Quadrature aka C3 (chips)
CDAC	7 MHz Quadrature Clock
CHNG	Media Change (floppy)
CLKRD/CLKWR	Real-time Clock Read/Write
CSYNC	Composite Sync (video)
CTS	Clear to Send (rs232)
D(15:0)	Processor Data (68000)
DIR	Direction (floppy)
DKRD	Diskette Read Data (floppy)
DKWDB	Diskette Write Data (floppy)
DKWEB	Diskette Write Enable (floppy)
DMAL	Chip DMA Request (chips)
DRA[8:0]	DRAM Address (DRAM, chips)
DRD[15:0]	DRAM Data (DRAM, chips)
DSR	Data Set Ready (rs232)
DTACK	Data Transfer Acknowledge (68000)
DTR	Data Terminal Ready (rs232)
E	Peripheral E Clock (68000)
EXRAM	Expansion Memory Present
FC[0:0]	Function Control (68000)
FIRE0/FIRE1	Fire Button (joysticks)
HLT	Processor Halt (68000)
HSYNC	Horizontal Sync (video)
INDEX	Diskette Index Hole (floppy)
INT[2,3,6]	Interrupt Requests (chips)
IORESET	I/O Reset
IPL[2:0]	Processor Interrupt Requests (68000)
KBCLOCK	Keyboard Clock (keyboard)
KBDATA	Keyboard Data (keyboard)
KBRESET	Keyboard Reset (keyboard)
LDS/UDS	Upper/Lower Data Strobe (68000)
LED	Power On LED

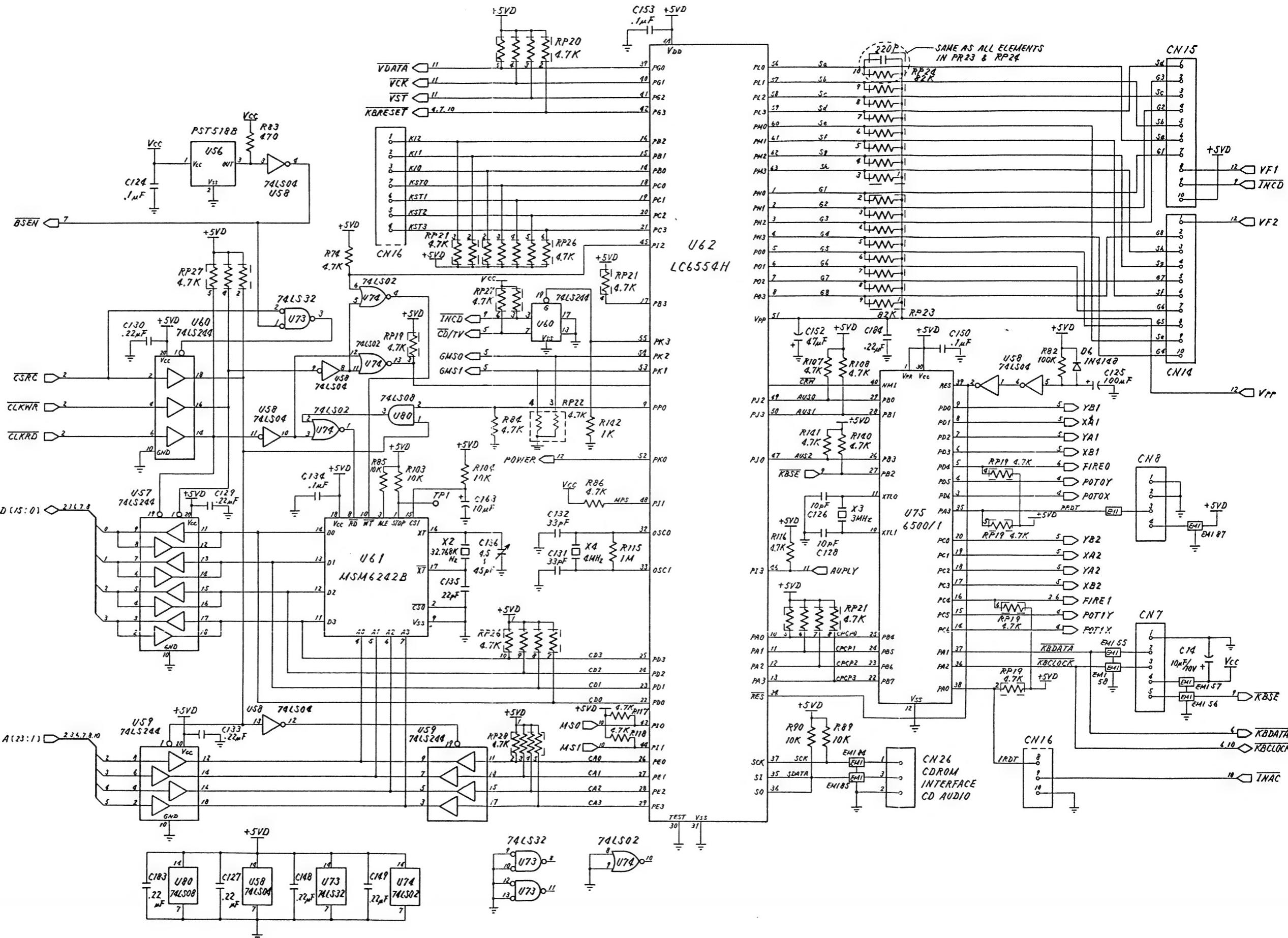
SIGNAL	DESCRIPTION
LEFT/RIGHT	Audio Channels
MTR	Motor On (floppy)
MTR0	Motor On Drive (floppy)
MOV/MOH	Mouse Quadrature Signals (joysticks)
M1V/M1H	Mouse Quadrature Signals (joysticks)
OVL	Overlay ROM over RAM
OVR	Override System Decoding
PIXELSW	Pixel Switch (video)
POT0X/POT0Y	Pot Lines (joysticks)
POT1X/POT1Y	Pot Lines (joysticks)
POUT	Paper Out (parallel)
PPD[7:0]	Parallel Port Data (parallel)
RAMEN	RAM Enable (chips)
REGEN	Chip Register Enable (chips)
RAS0/RAS1	R Internal Expansion Lines (DRAM)
RDY	Drive Ready (floppy)
RESET	General Reset
RGA[8:1]	Register Address Bus (chips)
RI	Ring Indicate (rs232)
ROMEN	ROM Enable
RTS	Request to Send (rs232)
RST	Processor Reset (68000)
RXD	Receive Data (RS232)
RW	Processor Read/Write (68000)
SEL	Select (parallel)
SEL[3:0]	Drive Select (floppy)
SIDE	Side Select (floppy)
STEP	Head Step Command (floppy)
TRK0	Track 0 Sense (floppy)
TXD	Transmit Data (RS232)
VMA	Valid Memory Address (68000)
VPA	Valid Peripheral Address (68000)
VSYNC	Vertical Sync (video)
WE	Write Enable (DRAM)
WPROT	Write Protect Sense (floppy)
XCLK	External 28 MHz Clock (genlock)
XCLKEN	External Clock Enable (genlock)
XRDY	External Data Ready
AUDL/AUDR	Audio Left/Right
AEMP	Audio Demodulus
AUPLY	CD Audio Play
BAS	Buffered Address Strobe
BCLK	CD Audio Clock
BCSMCEN/BCSMCOD	Buffered Chip Select Memory Card Even/Odd
BRW	Buffered Processor Read/Write
BSEN	Logic Voltage Sense
BTXD	Buffer Transmit Data (Midi)
BLDS/BUDS	Buffered Upper/Lower Data Strobe

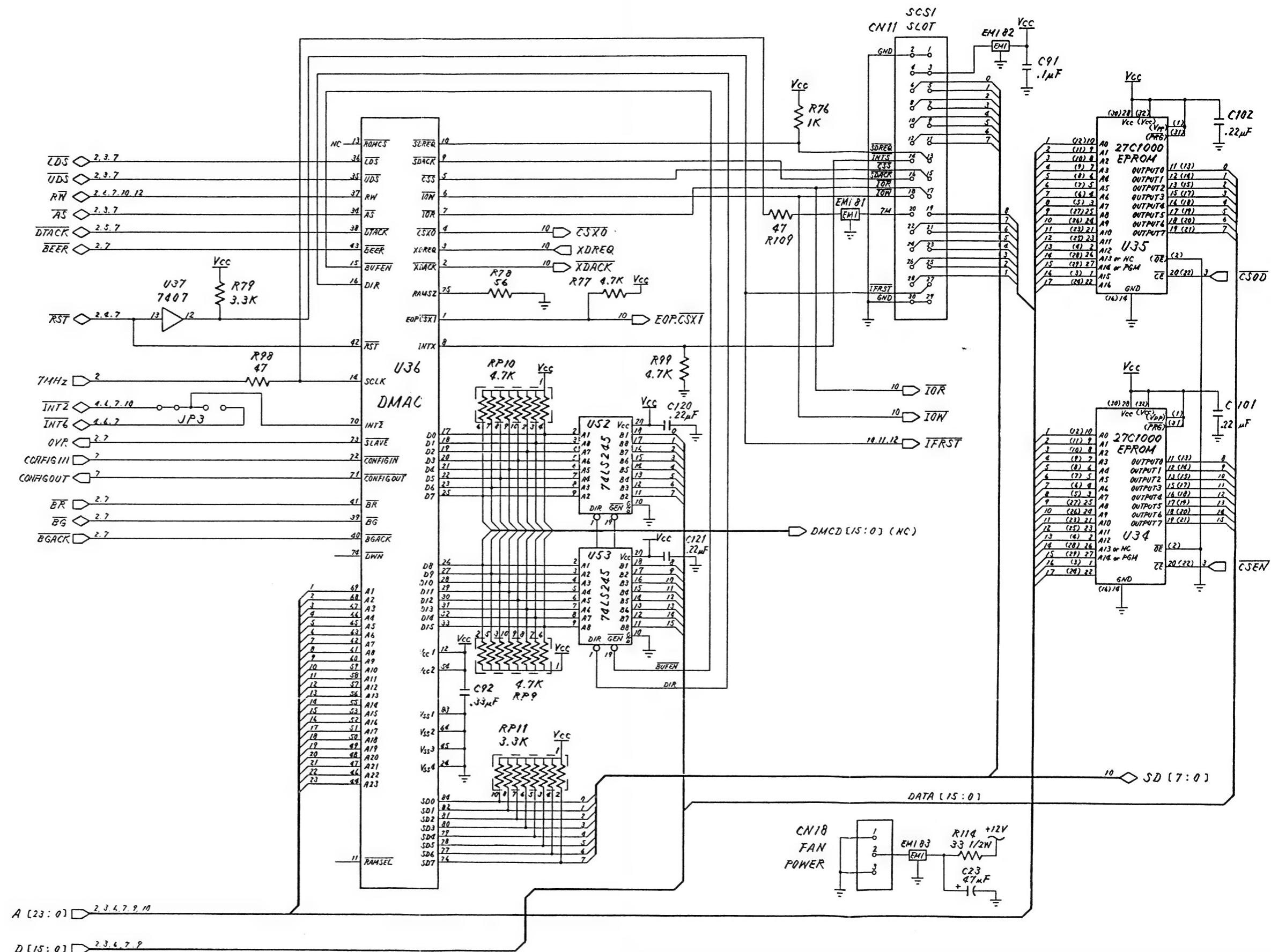
SIGNAL	DESCRIPTION
C16M	16MHz Dac Clock
CDAL/CDAR	CD Audio Left/Right
CD/TV	Select CD/TV (see INCD)
CONFIGIN	Config In
CONFIGOUT	Config Out
CSCD	Chip Select CDROM Driver
CSEN/CSOD	Chip Select CDROM Driver Even/Odd
CSMC	Chip Select Memory Card
CSMCEN/CSMCOD	Chip Select Memory Card Even/Odd
CSNV	Non-Volatile Memory Select
CSRC	Real Time Chip Select
CSX0	XT Device Chip Select No.0
DACATT	Attinuator Data (Dac)
DACLCH	Attinuator Latch (Dac)
DACST	Attinuator Strobe (Dac)
DATA	CD Audio Data
DMCD	Dmac Dma Data
EOP.CSX1	End of Process/XT Device Chip Select No.1
GMS[1:0]	Genlock Mode Select (Remote Control)
IFRST	Interface Reset
INAC	Indicator Power/Status
INCD	Indicator CD/TV Mode
INTD	CD Drive Reset
INTS	SCSI Interrupt
IOR/IOW	Dmac Read/Write
KBSE	Keyboard Sense
LMUTE	Line Mute
LRCLK	Audio Left/Right Clock
MPS	Power Sense (Logic)
MS[1:0]	Genlock Mode Select (Amiga)
MUTE	CD Mute
POWER	Main Logic Power On/Off
SD[7:0]	Dmac XT/SCSI Data
VCK	Attinuator Data Clock (Head Phone)
VDATA	Attinuator Data Clock (Head Phone)
VF[2:1]	Filament Voltage
VST	Attinuator Data Clock (Head Phone)
VPP	-30V Voltage
XA,YA,XB,YB[2:1]	Mouse Input Signal
XDACK	XT Device Data Acknowledge
XDREQ	XT Device Data Requirement
EMC	ENABLE MEMORY CARD
ECD	ENABLE CDROM DRIVER (ROM)
WEPROM	WRITE ENABLE E2PROM



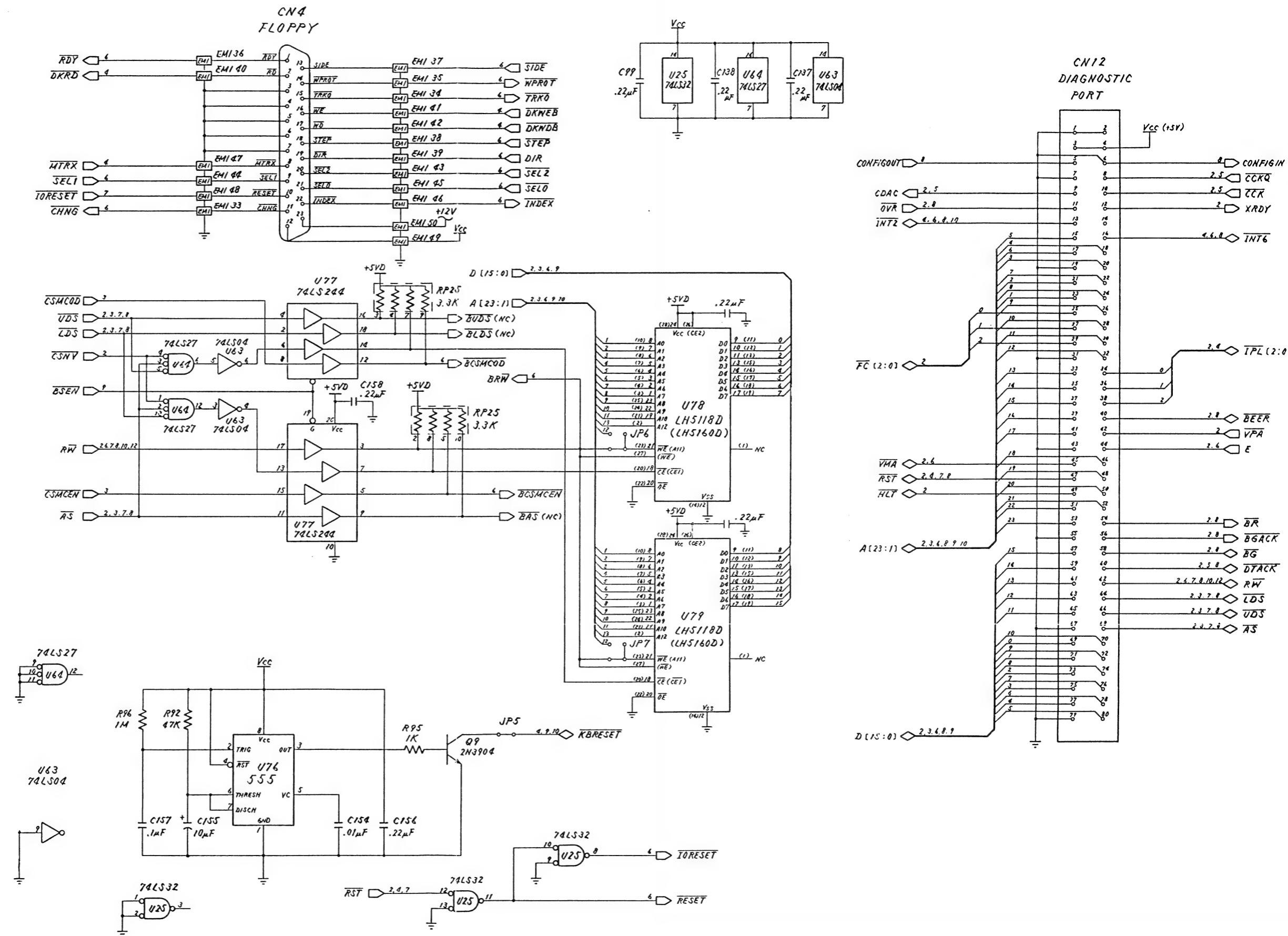


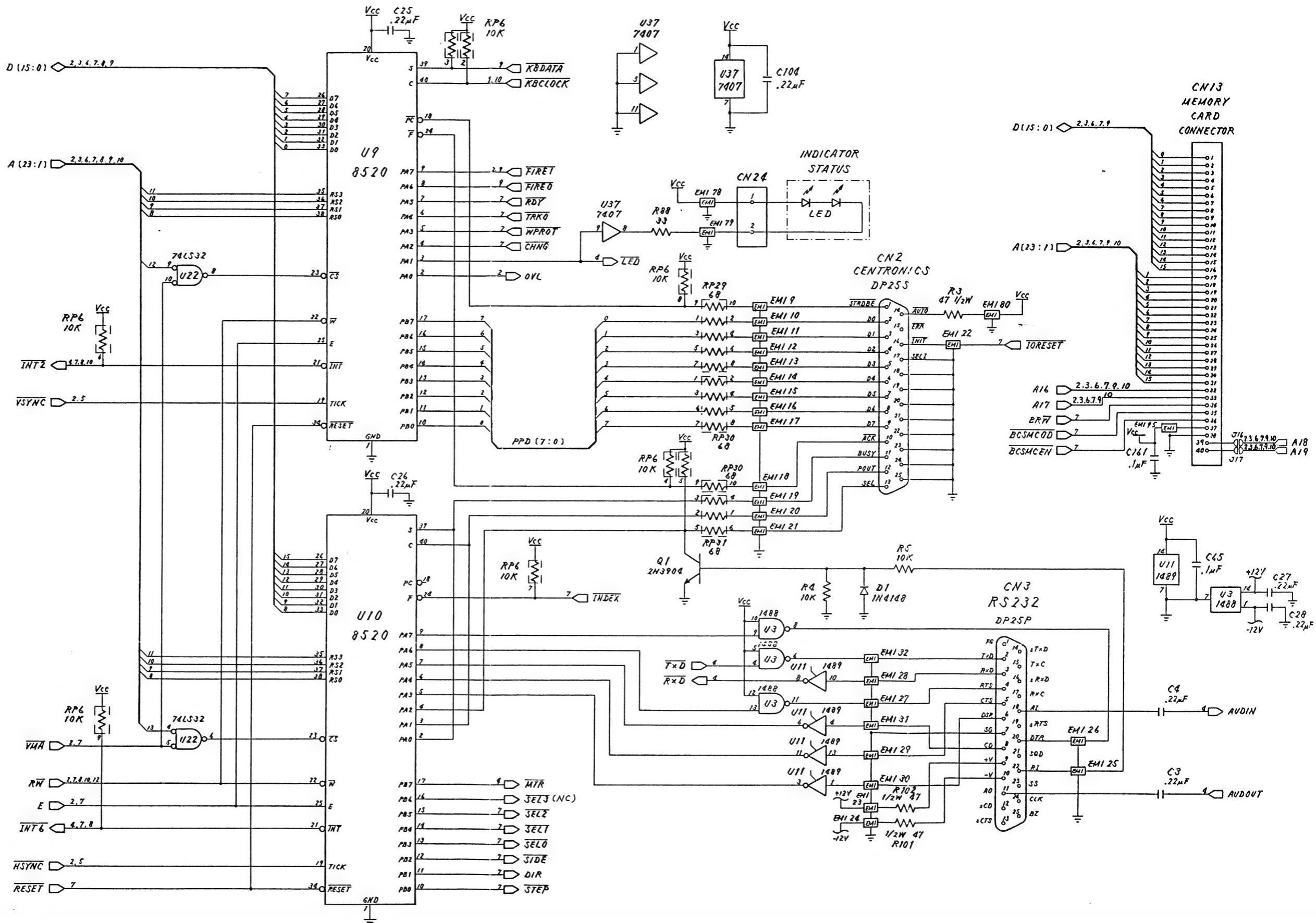


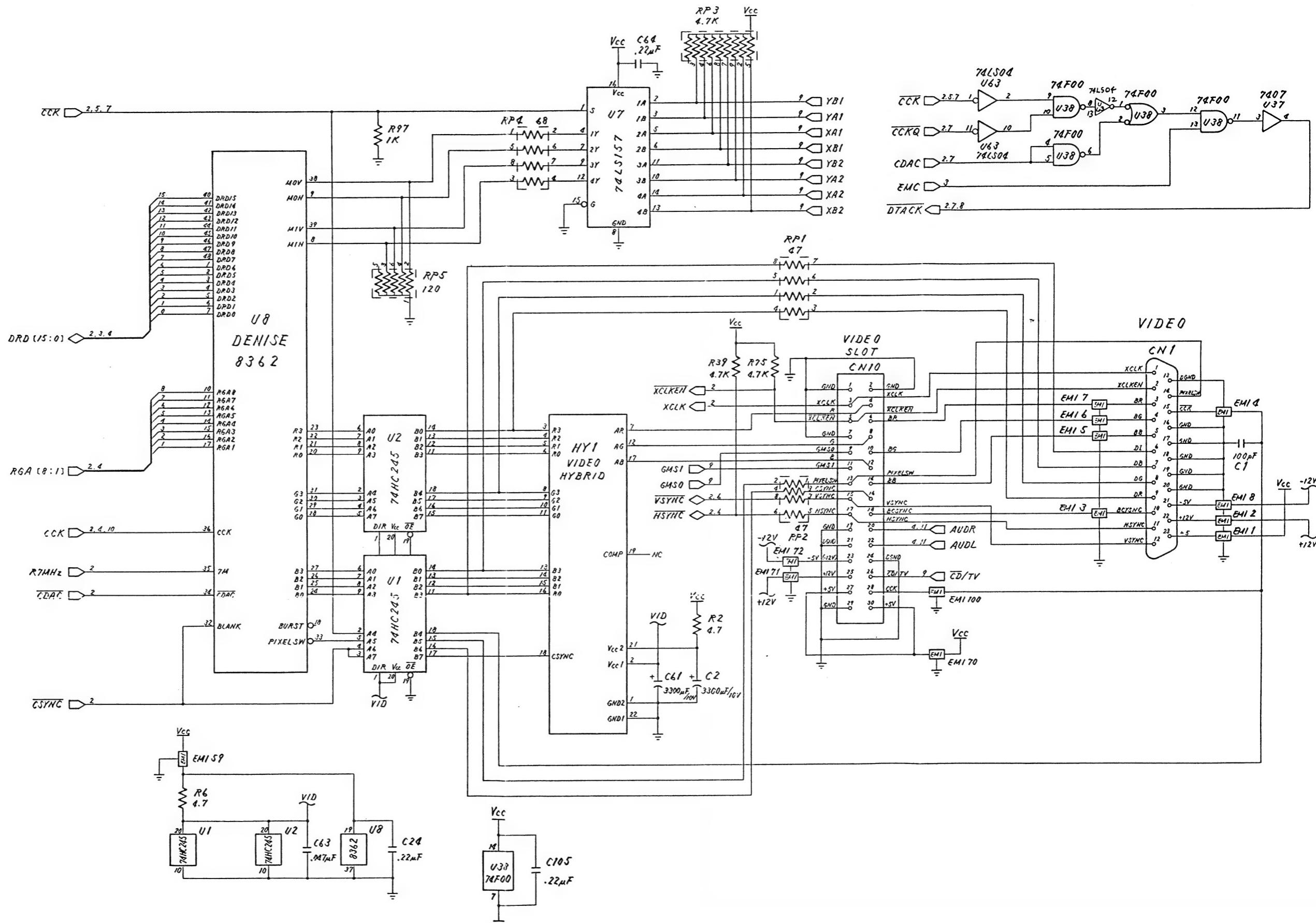


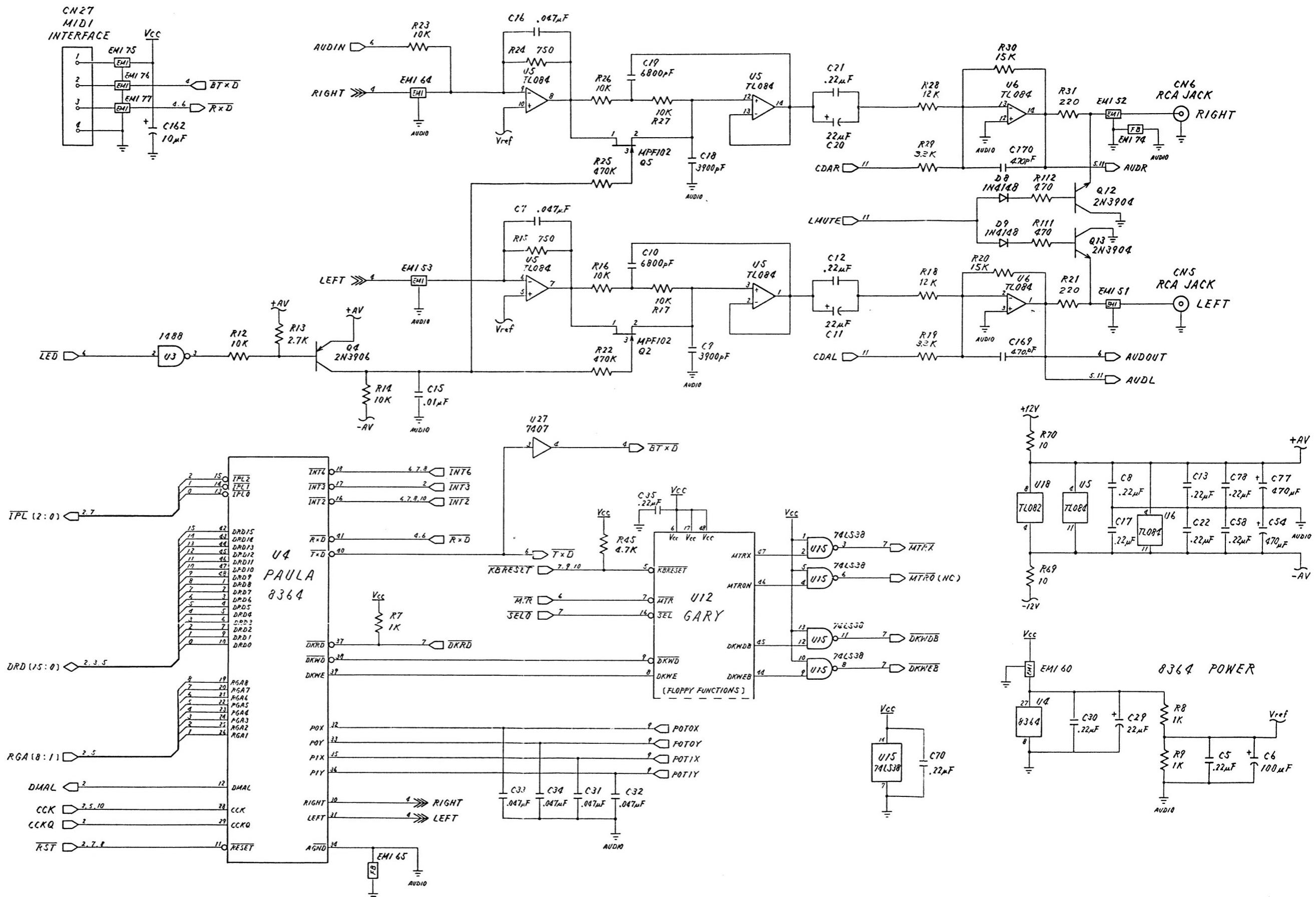


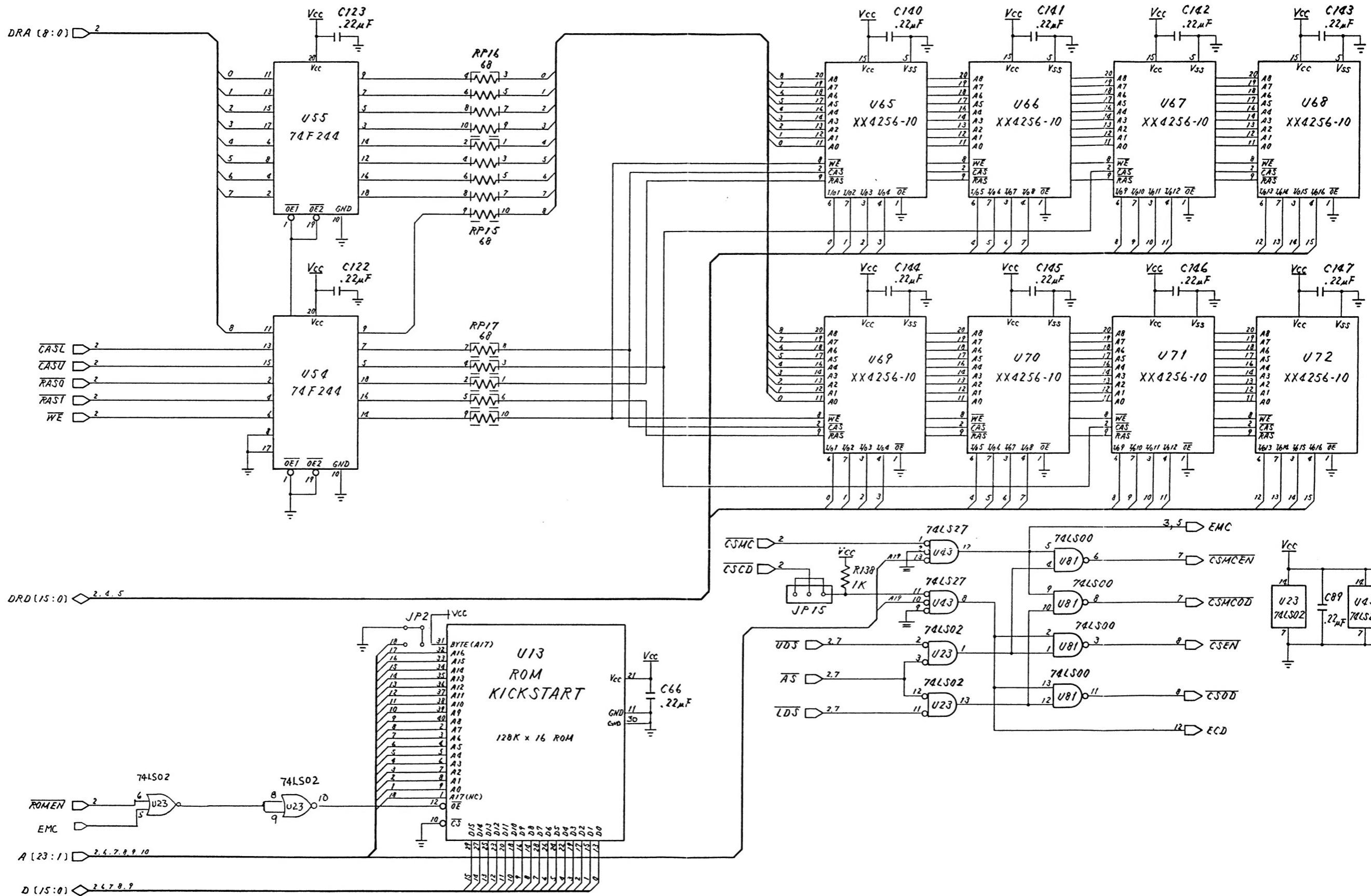
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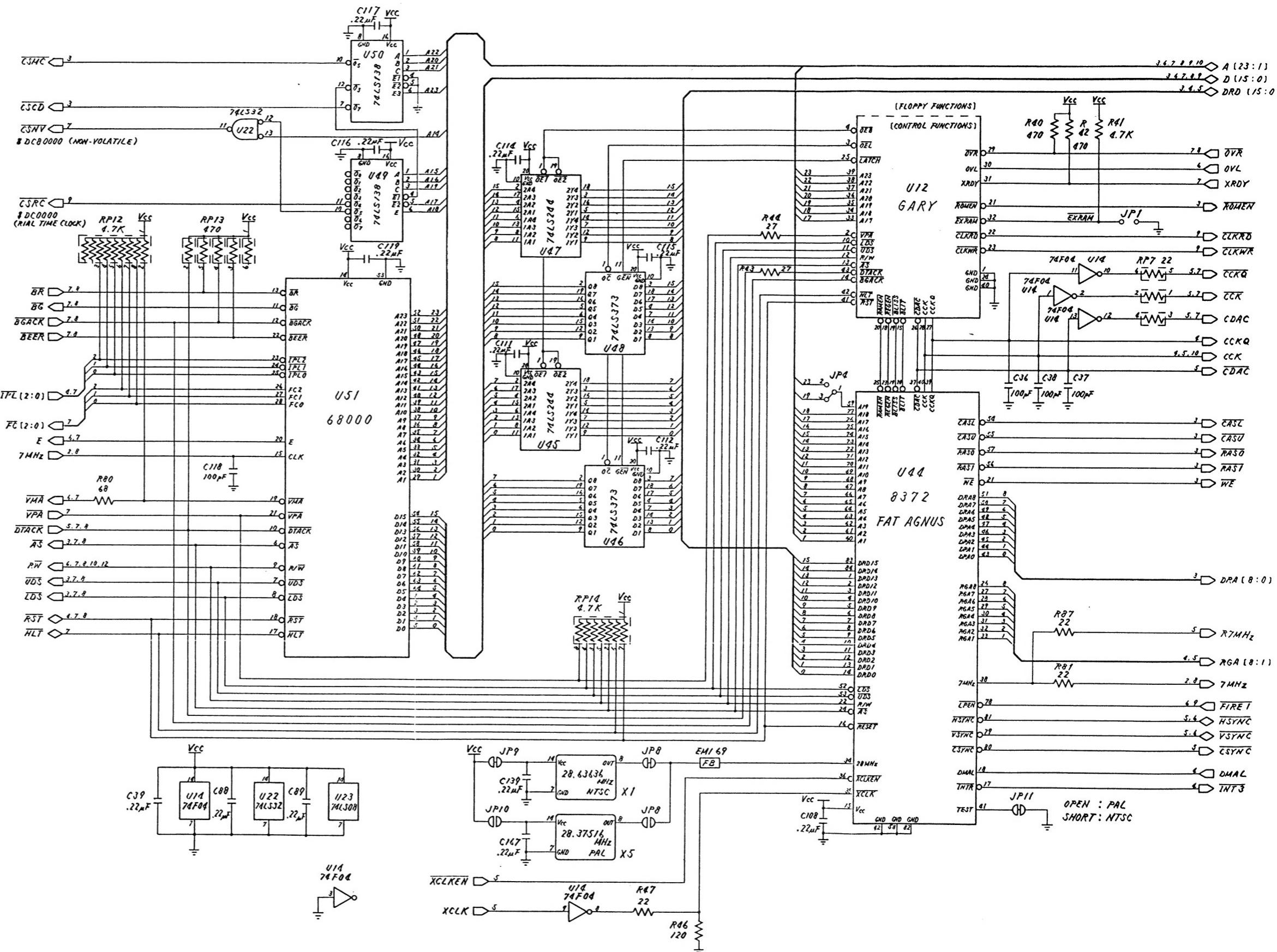












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